

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

194. (New) A method for identifying a compound that potentially elicits or modulates T1R2/T1R3 (sweet) receptor associated taste comprising:

(i) screening one or more compounds in a binding assay which identifies compounds that specifically bind to a T1R2/T1R3 (sweet) taste receptor or which specifically modulate (enhance or inhibit) the specific binding of another compound to a T1R2/T1R3 (sweet) taste receptor; and

(ii) identifying compounds that potentially elicit or modulate T1R2/T1R3 (sweet) taste based on their (a) specific binding to a T1R2/T1R3 sweet taste receptor or (b) modulation of the specific binding of another compound to a T1R2/T1R3 sweet taste receptor.

195. (New) The method of claim 194 wherein said T1R2 receptor is selected from the group consisting of rat T1R2, mouse T1R2 and human T1R2 and said T1R3 is selected from the group consisting of rat T1R3, mouse T1R3 and human T1R3.

196. (New) The method of claim 194 wherein said T1R2 and T1R3 are of the same species origin.

197. (New) The method of claim 194 wherein said T1R2 and T1R3 are of different species origin.

198. (New) The method of claim 194 wherein said T1R2 is a human T1R2 having the amino acid sequence contained in SEQ. ID. NO: 6.

199. (New) The method of claim 194 wherein said T1R2 is a human T1R2 that exhibits at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

200. (New) The method of claim 194 wherein said T1R2 is a human T1R2 that exhibits at least 95% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

201. (New) The method of claim 194 wherein said T1R2 is a human T1R2 that exhibits at least 96% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

202. (New) The method of claim 194 wherein said T1R2 is a human T1R2 that exhibits at least 97% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

203. (New) The method of claim 194 wherein said T1R2 is a human T1R2 that exhibits at least 98% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

204. (New) The method of claim 194 wherein said T1R2 is a human T1R2 that exhibits at least 99% sequence identity to the polypeptide contained in SEQ. ID. NO: 6.

205. (New) The method of claim 194 wherein said T1R2 is encoded by the nucleic acid sequence contained in SEQ. ID. NO: 10.

206. (New) The method of claim 194 wherein said T1R2 is encoded by a nucleic acid sequence that hybridizes under stringent hybridization conditions to the nucleic acid sequence contained in SEQ. ID. NO: 10.

207. (New) The method of claim 194 wherein said T1R2 is a polypeptide is a fragment of the polypeptide encoded by the nucleic acid sequence contained in SEQ ID. NO: 10 that when expressed in association with a T1R3 polypeptide yields a T1R2/T1R3 sweet taste receptor that specifically points to sweet taste stimuli.

208. (New) The method of claim 194 wherein said T1R2 compounded a fragment of the human T1R2 polypeptide contained in SEQ. ID. NO. 6 that when expressed in association with a T1R3 polypeptide results in a heteromeric T1R2/T1R3 taste receptor that specifically binds sweet taste stimuli.

209. (New) The method of claim 194 wherein said T1R3 is a human T1R3 having the amino acid sequence contained in SEQ. ID. NO: 7.

210. (New) The method of claim 194, wherein said T1R3 polypeptide possesses at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

211. (New) The method of claim 194, wherein said T1R3 polypeptide possesses at least 95% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

212. (New) The method of claim 194, wherein said T1R3 polypeptide possesses at least 96% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

213. (New) The method of claim 194, wherein said T1R3 polypeptide possesses at least 97% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

214. (New) The method of claim 194, wherein said T1R3 polypeptide possesses at least 98% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

215. (New) The method of claim 194, wherein said T1R3 polypeptide possesses at least 99% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

216. (New) The method of claim 194 wherein the T1R3 polypeptide is a rat T1R3 polypeptide having the sequence contained in SEQ. ID. NO: 4.

217. (New) The method of claim 194 wherein the T1R3 polypeptide is encoded by the nucleic acid sequence contained in SEQ ID. NO: 9.

218. (New) The method of claim 194 wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that hybridizes to the nucleic acid sequence

contained in SEQ. ID. NO: 9 under stringent hybridization conditions or fragments thereof that encodes a T1R3 polypeptide that when expressed in association with a T1R2 polypeptide yields a heteromeric umani T1R2/T1R3 taste receptor that specifically binds umani taste stimuli.

219. (New) The method of claim 194 wherein said T1R2/T1R3 receptor are expressed by a cell.

220. (New) The method of claim 194 wherein said T1R2/T1R3 receptor is comprised in a membrane extract.

221. (New) The method of claim 194 wherein said T1R2/T1R3 receptor is attached to a solid phase.

222. (New) The method of claim 194 wherein said T1R2/T1R3 receptor is in solution.

223. (New) The method of claim 194 wherein said T1R2/T1R3 receptor is comprised in a liquid bilayer or vesicle.

224. (New) The method of claim 219 wherein said cell is an intact or permeabilized cell.

225. (New) The method of claim 219 wherein said cell further expresses a G protein.

226. (New) The method of claim 219 wherein said cell is a prokaryotic cell.

227. (New) The method of claim 219 wherein said cell is an eukaryotic cell.

228. (New) The method of claim 227 wherein said cell is an insect, yeast, amphibian or mammalian cell.

229. (New) The method of claim 227 wherein said cell is a CHO cell, HEK-293 cell, COS cell or Xenopus oocyte.

230. (New) The method of claim 194 wherein the binding assay detects changes in the conformation of the T1R2/T1R3 heteromeric receptor.

231. (New) The method of claim 230 wherein said changes are detected by NMR spectroscopy.

232. (New) The method of claim 230 wherein said changes are detected by fluorescence spectroscopy.

233. (New) The method of claim 194 wherein said T1R2/T1R3 (sweet) taste receptor further comprises a G protein.

234. (New) The method of claim 230 wherein said G protein is  $G_{\alpha 15}$ ,  $G_{\alpha 16}$  or gustducin.

235. (New) The method of claim 194 wherein said binding assay includes the use of a detectable label.

236. (New) The method of claim 235 wherein said label is an enzyme, radionuclide, chemiluminescent compound or fluorescent compound.

237. (New) The method of claim 197 wherein the binding assay detects displacement of a labeled ligand from solid T1R2/T1R3 heteromeric receptor.

238. (New) The method of claim 194 wherein said binding assay is a fluorescence polarization or FRET assay.

239. (New) The method of claim 194 wherein the binding assay detects conformational changes in the T1R2/T1R3 taste receptor based on altered susceptibility to proteolysis.

240. (New) The method of claim 194 which is a competitive binding assay.

241. (New) The method of claim 194 wherein to binding assay is a non-competitive binding assay.

242. (New) The method of claim 194 wherein the binding assay detects the effect of said compound on the specific binding of said compound to said receptor.

243. (New) The method of claim 194 wherein said binding assay detects the effect of said compound on the binding of a natural or artificial sweetener compound to said receptor.

244. (New) The method of claim 194 wherein said binding assay under a cell that stably expresses the T1R2/T1R3 receptor on its surface.

245. (New) The method of claim 194 which said binding assay uses a cell that transiently expresses the T1R2/T1R3 receptor on its surface.

246. (New) The method of claim 194 wherein the binding assay uses an HEK-293 cell that stably expresses T1R2/T1R3 and further expresses  $G_{\alpha 15}$ .

247. (New) The method of claim 246 wherein said binding assay detects the effect of said compound on the binding of a radioactively or fluorescently labeled ligand to said receptor.

248. (New) The method of claim 194 wherein said binding assay detects binding based on a detectable change in fluorescence absorbance or refractive index.

249. (New) The method of claim 194 wherein the binding assay is a high throughput screening assay.

250. (New) The method of claim 247 wherein the assay screens a combinatorial chemical library.

251. (New) The method of claim 247 wherein the assay screens a randomized small compound library.

252. (New) The method of claim 194 which further includes step (3) wherein the effect of said compound on a T1R2/T1R3 (sweet) taste receptor is confirmed in a human or animal taste test.



**IN THE TITLE:**

Kindly cancel the prior title and substitute the following

**TITLE**

- Binding Assays That Use the T1R2/T1R3 (sweet) Taste Receptor to Identify  
Compounds That Elicit or Modulate Sweet Taste -